CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 88 - 071
NPDES PERMIT NO. CA0038539

WASTE DISCHARGE REQUIREMENTS FOR:

WEST COUNTY AGENCY OF CONTRA COSTA COUNTY, CALIFORNIA,
WEST CONTRA COSTA SANITARY DISTRICT, AND
CITY OF RICHMOND MUNICIPAL SEWER DISTRICT

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. The West County Agency of Contra Costa County, California (hereinafter discharger), a joint powers agency formed between the West Contra Costa Sanitary District and the City of Richmond Municipal Sewer District applied to the Board on June 4, 1987, for reissuance of waste discharge requirements and a permit to discharge under the National Pollutant Discharge Elimination System (NPDES).

2. The discharger presently discharges an average dry weather flow of 13.1 million gallons per day (mgd) of combined effluent from the West Contra Costa Sanitary District and the City of Richmond Municipal Sewer District secondary treatment plants which have a combined average dry weather flow capacity of 28.5 mgd. The treated effluent is discharged into San Francisco Bay, a water of the State and of the United States, via a single deepwater outfall located 4700 feet offshore of Point Richmond at a depth of 26 feet below mean lower low water (Latitude 37 deg., 54 min., 47 sec.; Longitude 122 deg., 25 min., 06 sec.).

3. The discharger provides treatment of domestic and industrial wastewater at the following facilities:

   a. The West Contra Costa Sanitary District (WCCSD) treatment facility, which currently provides full secondary treatment for an average dry weather flow of 6.7 mgd and has a dry weather design capacity of 12.5 mgd. Treatment consists of screening, grit removal, flow equalization, primary sedimentation, high-rate trickling filter, activated sludge, secondary clarification, and chlorination. Treated effluent is conveyed via force main to a junction structure at the Richmond treatment facility. Sludge is anaerobically digested, dried in open lagoons and disposed of by landfill burial at an authorized disposal site.

b. The City of Richmond Municipal Sewer District (City of Richmond) treatment facility, which currently provides full secondary treatment for an average dry weather flow of 6.4 mgd and has a dry weather design capacity of 16.0 mgd. Treatment consists of screening, grit removal, comminution, preaeration, primary sedimentation, activated sludge, secondary clarification, and chlorination. Treated effluent is combined with the WCCSD chlorinated effluent and the combined effluent is dechlorinated by sulfonation prior to discharge by gravity via the deepwater outfall to San Francisco Bay. Sludge is thickened by dissolved air floatation, anaerobically digested and conveyed via force main to the WCCSD facilities, for drying and disposal by landfill burial.

4. There are potentially viable shellfish beds in San Francisco Bay that could be affected by the discharge of wastewater from the West County Agency outfall. For the protection of these shellfish beds the outfall provides a minimum dilution of at least 45:1 under normal conditions. Less dilution may occur during periods when high delta outflows cause stratification of receiving waters, but shellfish should nonetheless receive adequate protection during such periods.

5. The West Contra Costa Sanitary District facility includes three flow equalization basins for management of wet weather flows. During periods when wet weather flows exceed the plant's secondary treatment capacity, influent wastewater is diverted to and stored in the basins. After peak flows have sufficiently subsided, stored wastewater is returned to the plant headworks to receive full secondary treatment.

6. The City of Richmond is currently implementing its Wet Weather Facilities Improvement Program. Phase I improvements, completed in 1987, included modifications to existing facilities to provide primary treatment and disinfection for wet weather flows in excess of the plant's secondary treatment capacity. Phase I improvements also allow storage of up to two million gallons of primary treated effluent during peak flows with subsequent return of stored wastewater for full secondary treatment. Phase II improvements, projected for completion by December 1988, include emergency standby power for the entire plant, alarms and alarm telemetry for the collection system pump stations, and improved reliability of the plant's influent pumping system.

7. The West Contra Costa Sanitary District and the City of Richmond are in the process of implementing Environmental Protection Agency (EPA) approved pretreatment programs in accordance with Regional Board Order No. 84-60.

8. The discharge is presently governed by Waste Discharge Requirements in Order No. 82-65, adopted by the Board on December 15, 1982, which allow discharge to San Francisco Bay.

9. The Regional Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986, and the State Water Resources Control Board approved the revised plan on May 21, 1987. The Basin Plan contains water quality objectives for San FranciscoBay.

10. The beneficial uses of San Franciso Bay identified in the Basin Plan include:

    a. Water contact recreation
    b. Non-contact water recreation
    c. Navigation
    d. Open commercial and sport fishing
    e. Wildlife habitat
    f. Fish spawninig and migration
    g. Industrial uses
    h. Preservation of rare and endangered species
    i. Shellfishing

11. Operation and Maintenance Manuals are maintained by the two treatment facilities for purposes of providing plant and regulatory personnel with a source of information describing all equipment, facilities, recommended operation strategies, process control monitoring, and maintenance activities. In order to remain useful and relevant documents, the manuals should be kept updated to reflect significant changes in treatment facilities.

12. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (California Environmental Quality Act) pursuant to Section 13389 of the California Water Code.

13. The discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity for a public hearing and the opportunity to submit their written views and recommendations.

14. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the West County Agency of Contra Costa County, California, a joint powers agency, the West Contra Costa Sanitary District and the City of Richmond shall comply with the following:

A. Discharge Prohibitions

1. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the treatment plants or from the collection systems or pump stations tributary to the treatment plants, is prohibited.

2. The discharge of average dry weather flows greater than 28.5 million gallons per day is prohibitied. Average dry weather flow shall be determined over three consecutive dry weather months each year.

3. Degradation of harvestable shellfish in the area as a result of the discharge is prohibited.

4. Discharge of waste at any point where it does not receive a minimum initial dilution of 45:1, other than during periods when the Delta outflow is greater than 8000 cubic feet per second, is prohibited. During the periods of Delta outflow greater than 8000 cubic feet per second, the waste shall receive a minimum initial dilution of 10:1 at all times.

B. Effluent Limitations

1. Effluent discharged shall not exceed the following limits:

Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
a. Biochemical Oxygen Demand (BOD_5)	mg/l	30	45	60	--
b. Total Suspended Solids	mg/l	30	45	60	--
c. Settleable Matter	ml/l-hr	0.1	--	--	0.2
d. Oil and Grease	mg/l	10	--	20	--
e. Total Chlorine Residual (1)	mg/l	--	--	--	0.0

(1) Requirement defined as below the limit of detection in standard test methods.

2. The arithmetic mean of the biochemical oxygen demand (five-day, 20° C) and suspended solids values, by weight for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal).

3. The pH of the discharge shall not exceed 9.0 nor be less than 6.0.

4. The survival of test organisms acceptable to the Board in 96-hour bioassays of the effluent shall achieve a 90 percentile value of not less than 50 percent survival based on the ten most recent consecutive samples.

5. Representative samples of the effluent shall not exceed the following limits in micrograms per liter (ug/l): (1)

Constituent	Daily Maximum
a. Arsenic	200
b. Cadmium	30
c. Chromium(VI) (2)	110
d. Copper	200
e. Lead	56
f. Mercury	1
g. Nickel	71
h. Silver	23
i. Zinc	580
j. Cyanide	25
k. Phenols	500
l. PAHs (3)	150

(1) These limits are intended to be achieved through secondary treatment and pretreatment.

(2) The discharger may at its option meet this limit as total chromium.

(3) Polynuclear Aromatic Hydrocarbons (PAHs). This limit applies to the summation of the detected levels of the individual constituent PAHs as identified by EPA Method 610 (i.e. Total PAHs). If a discharge exceeds this limit, the concentrations of individual constituents shall be reported.

6. The moving median value for the Most Probable Number (MPN) of total coliform bacteria in any five (5) consecutive effluent samples shall not exceed 240 MPN per 100 milliliters (240 MPN/100 ml). Any single sample shall not exceed 1100 MPN/100 ml.

C. Receiving Water Limitations

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin;

e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State in any place within one foot of the water surface:

a. Dissolved Oxygen 5.0 mg/l, minimum.

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause lesser concentrations than those specified above, then the discharge shall not cause further reduction in the ambient concentration of dissolved oxygen.

b. Dissolved Sulfide 0.1 mg/l, maximum.

c. pH Variation from normal ambient pH by more than 0.5 pH units.

d. Un-ionized Ammonia 0.025 mg/l as N, annual median; 0.16 mg/l as N, maximum.

3. The discharger shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. Provisions

1. Requirements prescribed by this Order superscede the requirements prescribed by Order No. 82-65. Order No. 82-65 is hereby rescinded.

2. Where concentration limitations in mg/l are contained in this Permit, the following mass emission limitations shall also apply:

   Mass Emission Limit in lbs/day = Concentration Limit in mg/l x 8.34 x Actual Flow in million gallons per day (mgd) averaged over the time interval to which the limit applies.

3. Compliance with Effluent Limitation B.4. shall be determined using two test species in parallel flow-through effluent bioassays which use undiluted, combined effluent. One test specie shall be three-spine stickleback, and the other shall be either rainbow trout or fathead minnow.

4. The discharger shall comply with all sections of this Order immediately upon adoption.

5. The West Contra Costa Sanitary District and the City of Richmond shall review and update their Operations and Maintenance Manuals annually, or in the event of significant facility or process changes, shortly after such changes have occurred. Annual revisions, or letters stating that no changes are needed, shall be submitted to the Regional Board by April 15 of each year.

6. The discharger shall review and update by December 31, annually, its contingency plan as required by Board Resolution No. 74-10. The discharge of pollutants in violation of this Order where the discharger has failed to develop and/or implement a contingency plan will be basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

7. The West Contra Costa Sanitary District and the City of Richmond shall implement and enforce their approved pretreatment programs in accordance with Regional Board Order No. 84-60 and its amendments thereafter. The responsibilities of the District and the City include, but are not limited to:

   a. Enforcement of National Pretreatment Standards (e.g., prohibited discharges, Categorical Standards, local limits) in accordance with 40 CFR 403.5 and Section 307(b) and (c) of the Clean Water Act.

   b. Implementation of the pretreatment program in accordance with the legal authorities, policies, procedures, and financial provisions described in the General Pretreatment Regulations (40 CFR 403) and the approved pretreatment programs.

   c. Submission of annual and quarterly reports to the EPA and to the State as described in Regional Board's Order No. 84-60 and its amendments thereafter.

8. The discharger shall comply with the Self-Monitoring Program as adopted by the Board and as may be amended, except that the receiving water monitoring shall commence no later than three months from the date of adoption of the Self-Monitoring Program.

9. The discharger shall comply with all items of the attached "Standard Provisions, Reporting Requirements and Definitions" dated December, 1986.

10. This Order expires May 18, 1993. The discharger must file a Report of Waste Discharge in accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code not later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements.

11. This Order shall serve as a National Pollutant Discharge Elimination System Permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective 10 days after the date of its adoption provided the Regional Administrator, Environmental Protection Agency, has no objections. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

I, Roger B. James, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on May 18, 1988

ROGER B. JAMES
Executive Officer

Attachments:

Standard Provisions and Reporting Requirements, December 1986
Self-Monitoring Program
Resolution No. 74-10
Order No. 84-60

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

WEST COUNTY AGENCY OF CONTRA COSTA COUNTY, CALIFORNIA,

WEST CONTRA COSTA SANITARY DISTRICT AND

CITY OF RICHMOND MUNICIPAL SEWER DISTRICT

NPDES NO. CA0038539

ORDER NO. 88 - 071

CONSISTS OF

PART A, dated December 1986

AND

PART B

PART B

I. DESCRIPTION OF SAMPLING STATIONS

A. INFLUENT AND INTAKE

Station	Description
A-001	At any point in the West Contra Costa Sanitary District treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment.
A-002	At any point in the City of Richmond treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment.

B. EFFLUENT

Station	Description
E-001	At any point in the joint outfall between the point of discharge and the point at which all waste tributary to that outfall is present. (May be the same as E-001-DC)
E-001-D-1	At any point in the West Contra Costa Sanitary District disinfection facilities at which point adequate contact with the disinfectant is assured.
E-001-D-2	At any point in the City of Richmond disinfection facilities at which point adequate contact with the disinfectant is assured.
E-001-DC	At any point in the joint outfall at which all waste tributary to that outfall is present and all waste has been disinfected and dechlorinated.

C. RECEIVING WATERS

Station	Description
C-1	At a point in San Francisco Bay located directly above the center of the discharge diffuser.
C-2	At a point in San Francisco Bay located 200 feet upstream from the center of the discharge diffuser.
C-3	At a point in San Francisco Bay located 200 feet downstream from the center of the discharge diffuser.
C-R	At a point in San Francisco Bay located 1000 feet upstream from the center of the discharge diffuser.

D. LAND OBSERVATIONS
(WEST CONTRA COSTA SANITARY DISTRICT AND CITY OF RICHMOND TREATMENT PLANTS)

Station	Description
P-1 through P-'n'	Located along the periphery of the wastewater treatment plant, at equidistant intervals, not to exceed 500 feet.

NOTE: A sketch showing the locations of these stations shall accompany the monthly report for January of each calendar year.

E. OVERFLOWS AND BYPASSES
(WEST CONTRA COSTA SANITARY DISTRICT AND CITY OF RICHMOND TREATMENT PLANTS)

Station	Description
OV-1 through OV-'n'	At points in the treatment and collection system where overflows or bypasses occur, such as manholes, pump stations, or wet weather overflow structures.

NOTE: A map and description of each known overflow or bypass location shall accompany the monthly report for January of each calendar year.

II. SCHEDULE OF SAMPLING, MEASUREMENTS, AND ANALYSIS

The schedule of sampling, measurements and analysis shall be that given as Table I.

III. MODIFICATIONS TO PART A

A. Paragraph C.5. of Part A is revised to read:

Average weekly and average monthly values are calculated as the sum of all daily discharge values measured during the specified period (calendar week or calendar month), divided by the number of daily discharge values measured during that specified period.

B. Paragraph D.5. of Part A does not apply to this Self-Monitoring Program.

I, Roger B. James, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Regional Board Order No. 88 - 071.

2. Is effective on the date shown below.

3. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger and revisions will be ordered by the Executive Officer.

Roger B. James

ROGER B. JAMES
Executive Officer

Effective Date MAY 19, 1988

Attachment:

Table I with footnotes

TABLE 1

SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS (1,2,3)

Sampling Station	A-1 A-2	E-001			E-001-D1 E-001-D2		E-001-DC		All C Stas	All P Stas	All OV Stas		
TYPE OF SAMPLE	C-24	G	C-24	Cont	G	Cont	G	Cont	G/O	O	O		
Flow Rate (mgd)				D(4)		D							
BOD, 5-day, 20°C, or COD (mg/l & kg/day)	2/W		5/W										
Chlorine Residual & Dosage (mg/l & kg/day)					D(5)			Cont					
Settleable Matter (ml/l-hr. & cu. ft./day)		D											
Total Suspended Matter (mg/l & kg/day)	2/W		5/W										
Oil and Grease (mg/l & kg/day)			2/W(3)										
Coliform (Total or Fecal) (MPN/100 ml) per req't					5/W								
Fish Tox'y 96-hr. % Surv'l in undiluted waste								M(6)					
Ammonia Nitrogen (mg/l & kg/day)													
Nitrate Nitrogen (mg/l & kg/day)													
Nitrite Nitrogen (mg/l & kg/day)													
Total Organic Nitrogen (mg/l & kg/day)													
Total Phosphate (mg/l & kg/day)													
Turbidity (Jackson Turbidity Units)													
pH (units)							D		M				
Dissolved Oxygen (mg/l and % Saturation)							5/W		M				
Temperature (°C)									M				
Apparent Color (Visual Observation)									M				
Secchi Disc (inches)													
Sulfides (if DO<5.0 mg/l) Total & Dissolved (mg/l)							5/W		M				
Arsenic (mg/l & kg/day)			Q										
Cadmium (mg/l & kg/day)			Q										
Chromium, Total (mg/l & kg/day)			Q										
Copper (mg/l & kg/day)			Q										
Cyanide (mg/l & kg/day)			Q										
Silver (mg/l & kg/day)			Q										
Lead (mg/l & kg/day)			Q										

TABLE 1 (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	A-1 A-2	E-001			E-001-D1 E-001-D2		E-001-DC		All C Stas	All P Stas	All OV Stas		
TYPE OF SAMPLE	C-24	G	C-24	Cont	G	Cont	G	Cont	G/O	O	O		
Mercury (mg/l & kg/day)			Q										
Nickel (mg/l & kg/day)			Q										
Zinc (mg/l & kg/day)			Q										
Phenolic Compounds (mg/l & kg/day)			Q										
Polynuclear Aromatic Hydrocarbons (7) (mg/l & kg/day)			Q										
All Applicable Standard Observations (8)		5/W							M	2W	E		
Bottom Sediment Analyses and Observations													
Unionized Ammonia (mg/l as N)									M				

LEGEND FOR TABLE

TYPES OF SAMPLES

- G = grab sample
- C-24 = composite sample - 24-hour
- C-X = composite sample - X hours (used when discharge does not continue for 24-hour period)
- Cont = continuous sampling
- DI = depth-integrated sample
- BS = bottom sediment sample
- O = observation

TYPES OF STATIONS

- I = intake and/or water supply stations
- A = treatment facility influent stations
- E = waste effluent stations
- C = receiving water stations
- P = treatment facilities perimeter stations
- L = basin and/or pond levee stations
- B = bottom sediment stations
- G = groundwater stations
- OV = overflow or bypass stations

FREQUENCY OF SAMPLING

- E = each occurence
- H = once each hour
- D = once each day
- W = once each week
- M = once each month
- Y = once each year
- 2/H = twice per hour
- 2/W = 2 days per week
- 5/W = 5 days per week
- 2/M = 2 days per month
- 2/Y = once in March and once in September
- Q = quarterly, once in March, June, Sept. and December
- 2H = every 2 hours
- 2D = every 2 days
- 2W = every 2 weeks
- 3M = every 3 months
- Cont = continuous

TABLE I FOOTNOTES

(1) If any sample is in violation of limits, sampling frequency shall be increased for the parameter until compliance is demonstrated in two successive samples.

(2) During any time when bypassing occurs from any treatment unit(s) in either plant such that all wastewater leaving the treatment plant does not receive full secondary treatment, the monitoring program for effluent discharged from the treatment plant at E-001-D-1 or E-001-D-2 shall include the following sampling and analyses in addition to, and separate from, the above schedule for sampling, measurement and analyses:

- Composite sample of wastewater discharged from the treatment plant on an hourly basis for the duration of the bypass event, for BOD and Total Suspended Solids analyses.

- Grab samples of the treatment plant discharge for Total Coliform, Settleable Matter and Oil & Grease analyses.

- Sampling of the combined effluent (E-001) shall be conducted to coincide with sampling of the treatment plant discharge (E-001-D-1 or E-001-D-2) during any bypass event.

(3) Oil and Grease sampling shall consist of three (3) grab samples taken at equal intervals during the sampling day, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within an accuracy of plus or minus five percent (5%).

(4) The combined effluent flow rate may be determined from the measured effluent flow rates of the separate treatment plants.

(5) Dosage for Chlorine shall be reported daily as total pounds (lbs) or total kilograms (kgs) during the previous 24 hours, instantaneous dosage rate (rotometer reading) and calculated dosage concentration (mg/l) based on rotometer and flow at the time of reading. Concentrations at the head end of the chlorine contact chamber and immediately prior to dechlorination shall also be reported.

(6) Bioassays shall be performed using two test species in parallel flow-through tests using undiluted, combined effluent. One test specie shall be three-spined stickleback, and the other shall be either rainbow trout or fathead minnow.

(7) Polynuclear Aromatic Hydrocarbons (PAHs), as identified by EPA Method 610. If a discharge sample exceeds the effluent limitation for PAHs (Effluent Limitation B.5.1.), the concentrations of the individual constituent PAHs shall be reported.

(8) Effluent and land observations shall be recorded in log books maintained at each treatment plant. Only those observations which indicate unusual conditions need be reported in the monthly reports. All receiving water and overflow observations shall be reported in the monthly self-monitoring reports.